

Appl. Serial No. 10/742,899
Amendment dated April 11, 2005
Reply to Office Action of October 15, 2005

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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended). A dispenser for ~~paste-like products comprising a substantially cylindrical container (1) which contains the paste-like product and which is equipped at the bottom side with a follower piston (22), which is slidably displaceable on an inner wall of the container under pressure of the external atmosphere, and at its upper end carries a headpiece (3) which is slidably displaceable relative to the container (1) and comprises a discharge channel (32) for the product, which is connectable in communicating fashion to the container (1), and acts on a manually operable delivery means with a delivery chamber (100) of a variable volume for the product, the delivery means comprising a delivery element (5) which is longitudinally displaceable relative to the container (1) and the headpiece (3) and includes a delivery piston (51) which is slidably displaceable in the delivery chamber (100) and is connected to a delivery shaft (50) which circumferentially surrounds a delivery channel (50a) which comprises a delivery channel inlet opening (53) communicating with the delivery chamber (100) and a delivery channel outlet opening (58),~~
~~characterized in~~
~~that the discharge channel (32) is configured to extend laterally relative to the longitudinal direction of the delivery channel (50a), that the delivery channel outlet opening (58) is arranged on the circumferential surface of the delivery shaft (50) and, starting from an initial position in which the delivery channel outlet opening (58) is closed by a bushing (31) formed on the headpiece (3), can be brought by a displacement movement of the delivery element (5) relative to the headpiece (3) into a position in which the delivery channel outlet opening (58) is exposed relative to the discharge channel (32).~~ for dispensing a paste-like product,
comprising:

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Appl. Serial No. 10/742,899
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(a) a generally cylindrical hollow container (1) having a vertical longitudinal axis (X) and upper and lower ends, said container including intermediate its ends a transverse wall (10) that defines in said container a lower chamber (10a) for receiving the paste-like product, and an upper delivery chamber (100) having a cylindrical wall defined on a sleeve portion (13) of said container, said lower chamber containing a follower piston (22) that is vertically displaceable by the atmospheric pressure acting thereon, said transverse wall containing a discharge opening (11) containing valve means (20) that afford the passage of a variable volume of the paste-like product from said lower chamber to said delivery chamber when the pressure of said lower chamber exceeds that of said upper chamber;

(b) a generally cylindrical main headpiece (3) arranged above said transverse wall for vertical displacement relative to said container, said headpiece having upper and lower ends, said lower end containing an internal chamber terminating at its upper end in a top wall (35), said internal chamber having an inner cylindrical side wall that defines bushing means (31), said headpiece containing at its upper end a laterally extending product discharge channel (32) in communication with said internal chamber;

(c) a generally cylindrical vertically arranged delivery piston (5) arranged for vertical sliding movement relative to said container, said piston having an upper end (50) that extends within said headpiece internal chamber and terminates in an upper end wall (54), said piston having a lower end (52) that is in sliding engagement with said delivery chamber cylindrical wall, said piston containing a vertical longitudinal delivery channel (50a) having at its lower end an inlet opening (53) in communication with said delivery chamber, said delivery piston upper end containing at least one radial outlet opening (58) in communication with said longitudinal delivery channel; and

(d) spring means (7) biasing said headpiece upwardly toward a first position relative to said container;

Appl. Serial No. 10/742,899
Amendment dated April 11, 2005
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(e) said delivery piston having a first position relative to said container such that when said main headpiece is in said first position, the upper end of said delivery piston is spaced by a given distance (a) from said main headpiece upper wall, and said delivery piston outlet opening is closed by an upper first surface portion (31b) of said bushing means;

(f) said main headpiece being longitudinally displaceable downwardly relative to said container and said piston toward a second position in which said headpiece top wall engages said piston upper wall, and said bushing means first surface portion is displaced to an open position relative to said delivery piston outlet opening;

(g) said headpiece being downwardly displaceable from said second position toward a third position relative to said container, thereby causing said piston to be displaced by said headpiece to a second position relative to said container, whereby the pasty-like product is pumped from said delivery chamber to said product discharge channel via said piston longitudinal discharge channel and said piston outlet opening.

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